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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/179,872

10/28/1998

PAN-JIN KIM

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EXAMINER

BROWN, RUEBEN M

ART UNIT

PAPER NUMBER

2623

MAIL DATE

DELIVERY MODE

01/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/179,872

Applicant(s)

KIM ET AL.

Examiner

Reuben M. Brown

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2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/30/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-8,10-14,17,18,23,24 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-8,10-14,17,18,23,24 and 27-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/31/2007 has been entered.

Response to Arguments

2. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 7-8, 10-11, 13, 17-18, 23-24 & 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim, (U.S. Pat # 5,838,386), in view of Vancelette, (U.S. Pat # 5,894,320).

Considering claims 1 & 7, the amended claimed method for displaying channel information on a digital TV for receiving digital multichannel TV broadcasting, comprising

‘changing a current channel to a demanded major channel in response to a demand to change a major channel; and displaying on the TV screen, minor channel numbers of programs received through the demanded major channel’, Kim provides a teaching wherein on on-screen display (Fig. 6) shows the result of a user selection of a main channel, CH0. The TV screen simultaneously displays the three sub-channels CH1, CH2 & CH3, respectively, associated with the instant demanded main channel, CH0, see col. 6, lines 12-31.

However, Kim does not explicitly state that the sub-channels are received through the main channel, as recited in the claims. Nevertheless, Vancelette discloses a well known method of transmitting a plurality of digital channels of programming within a main RF channels, see col. 8, lines 20-45. In particular, Vancelette teaches that multiple channels of audio & video may be time-multiplexed by multiplexor 26 to provide a packetized stream 308, which is then modulated at a specific carrier frequency for transmission to customers. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Kim with the feature of transmitting a plurality of digital channels with a single RF channel, for the desirable advantage of providing the viewer with more choices, e.g., related content with a more efficient user interface for accessing the related content, as taught by Vancelette, col. 3, lines 5-67 thru col. 2, lines 1-65.

Considering claim 8, the claimed subject matter reads on Kim, Fig. 6, wherein the minor channels are displayed on the screen from top to bottom.

Considering claim 10, the instant claim reads on displaying the TV programs from the channels of the lowest minor channel number, after the instant channel is selected, which is necessarily included in Kim.

Considering claims 11 & 13; Kim provides the user with the option to select one or more of the sub-channels, CH1, CH2 or CH3.

Considering claims 17-18 & 24, the claimed apparatus and device for displaying channel information on a digital TV, comprising elements that correspond with subject matter mentioned above in the rejection of claim 1, are likewise treated.

Regarding the additional features recited in claim 18, 'wherein the display displays minor channel numbers and the major channel number simultaneously in a format of X, X-1, X-2...X-n, wherein X is the major channel number and 1,2...n are the minor channel numbers, and n is the highest minor channel number', is also met by the disclosure of Fig. 6, which displays main and sub-channels, using the syntax, CH0, CH1, CH1 & CH3.

Considering claim 23, Official Notice is taken that at the time the invention was made, it was well known in the art of interactive TV for a user to select one of a plurality of thumbnails and subsequently have the associated video take up the entire screen. It would have been obvious for one ordinary skill in the art at the time the invention was made, to operate Kim so that when a user selects one of the sub-channel, the associated video would fill the entire TV screen, since the user would generally be more interested in paying attention to the programming that has been selected, than being distracted by un-selected programming.

Considering claim 27, both Kim & Vancelette operate outside of an EPG environment.

Considering claim 28, even though Kim does not explicitly state that the channel numbers are displayed automatically, Official Notice is taken that at the time the invention was

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made, it was old in the art to display channel numbers automatically upon selection. It would have been obvious for one ordinary skill in the art at the time the invention was made, to operate Kim in a manner wherein the major and/or sub-channel numbers are displayed automatically upon selection, at least for the improvement of avoiding the user having to manually choose to display the channel numbers.

Considering claims 29 & 30, Vancelette teaches that the plurality of digital channels are multiplexed together and modulated on a single RF channel, col. 8, lines 21-45, which meets the claimed subject matter.

5. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim & Vancelette, further in view of Etheredge, (U.S. Pat # 6,172,674).

Considering claims 4 & 6, Kim does not teach hiding the major or minor channel numbers after a prescribed time has elapsed. Nevertheless, Etheredge provides a disclosure of removing a particular pop-menu that has been activated by the user, after a certain time, if a channel selection or menu item selection has not been made, (col. 13, lines 26-50; col. 14, lines 4-40; col. 15, lines 10-25). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Kim with the technology taught by Etheredge, at least for the known advantage of reducing the amount of extraneous information displayed to the viewer, since after a certain amount of time it may be assumed that the viewer is no longer interested in making a channel change from the menu displayed on the TV screen.

Considering claim 5, Kim provides for the user to select a sub-channel for display.

6. Claims 12 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim & Vancelette, in view of Keenan, (U.S. Pat # 5,161,023).

Considering claim 12, the instant claimed feature reads on an endless loop operation such that once the user gets to the top of a list of programs, the next program to be highlighted (selected), would be the program at the bottom of the list, and vice versa. Keenan (col. 1, lines 51-59) discloses such a technology. It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kim, with the known technology of 'wrap around' lists as taught by Keenan (Fig. 3A; col. 3, lines 40-52), at least for the desirable purpose of avoiding the user having to move the cursor in the other direction in order to reach the opposite extreme of the instant list, which would be burdensome on the user, at least in the case of long lists of programs.

Considering claim 14, as discussed above in the analysis of claim 12, it would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Kim with the well known 'wrap around' technology disclosed in Keenan (Fig. 3A). However, claim 14 requires the additional step that a user is automatically connected to a succeeding or preceding list of minor channels, depending on whether the user's cursor is currently selecting the highest minor channel or lowest minor channel, respectively of the currently active minor

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channel list. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify the combination of Kim & Keenan to move to a next list of channels, at least for the desirable advantage of avoiding the user having to manually select the next list of channels.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) Balakrishnan Provides a standard teaching regarding transmitting a plurality of digital programs multiplexed and modulated onto a single RF channel, col. 5, lines 21-36.

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Any response to this action should be mailed to:

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P.O. Box 1450
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or faxed to:

(571) 273-8300, (for formal communications intended for entry)

Or:

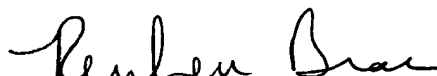
(571) 273-7290 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reuben M. Brown M. Brown whose telephone number is (571) 272-7290. The examiner can normally be reached on M-F(8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (571) 272-7331. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications and After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Reuben M. Brown


REUBEN M. BROWN
PATENT EXAMINER